

Xplor

Educator Guide

Educational activities for Xplor's **December 2012/January 2013** issue



Chain of Foods

“Food Chain Fun” (Page 16) shows how the sun’s energy moves from one organism to another in a food chain. In this activity, your students will make their own food chains to explore the following questions:

- How many different food chains might be present in our schoolyard?
- Do all food chains have the same components?
- What is the first requirement in each food chain?

Materials

- Science notebooks
- Pencils
- Colored pencils, markers, crayons
- White paper
- Copies of Page 16 of the December 2012/January 2013 issue of Xplor

Procedure

1. Students may work together or individually. For background, have students read Chapter 4 (Page 18) of the *Nature Unleashed* student book. They may also reference Chapter 2 (Page 4).
2. Have each student write this question in their science notebooks: “How many different food

chains might be present in our schoolyard?” Ask students to write a hypothesis below the question.

3. Have students observe their schoolyard, discuss available habitat, and think about what food chains may be present. Ask the students to identify a food chain and list its components in their notebooks.
4. Have students decide which ecosystem in the *Nature Unleashed* student book (prairie, pond, or forest) they would like to create a food chain for and write that ecosystem in their notebooks.
5. Have students draw small pictures of the food chain members for their particular ecosystem. They may have four or more parts to their chain. Ask each student to organize his or her drawings into a food chain, then make eight–10 photocopies of each student’s chain.
6. Have students cut out their pictures and create a maze similar to the one on Page 16 of Xplor. Explain that the way through the maze must follow the order of their food chain. Ask the students to paste the maze into their science notebooks.
7. Once finished with their maze, have students try to complete each other’s maze.
8. As a group, discuss the three questions introduced in this activity. Were the students’ hypotheses for question No. 1 correct?

Options

- Students may choose pictures from magazines to use in their food chain instead of drawing pictures.
- What happens if they take away one piece of their food chain? Does the chain still work? Why or why not?





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Mystery Plants

“Grow Mystery Plants” (Page 3) invites students to see what mystery seeds are buried in their backyards. In this activity, students will grow and observe mystery plants, make data tables for them, and compare sites to see if different ecosystems support different types of plants.

Materials

- Science notebooks
- Pencils and markers
- Soil (collected from schoolyard or home)
- Shovel or hand trowel
- Cups, small flower pots or other containers
- Rulers
- Hand lenses or other magnifiers

Procedure

1. Have students work individually or in pairs. Decide whether to have students collect soil from the schoolyard or bring samples from home. Have students follow the directions on Page 3 of *Xplor* for growing mystery plants. Label each cup with the student's name, the date the soil was collected, and where it was collected.
2. In their science notebooks, have students sketch their collection site (or include a photo) to show what plants (including trees) were present and to help determine what might grow from their sample.
3. In their science notebooks, have students predict and draw what might grow from their cups based on where the soil came from.
4. Have students prepare data tables in their science notebooks. Data recorded could include student name, date, collection site, watering

schedule and amounts, hours of sunlight the cups receive, and daily measurements of the plants once they sprout. (See Page 142 of the *Nature Unleashed* teacher guide for examples of how to organize data tables.)

5. Once mystery plants sprout, students should record data in their notebooks and continue to monitor plant growth for at least a month.
6. Compare data to see if different ecosystems support different types of plants. Do some sites have more diversity than others? Were students correct in their predictions? Can they identify any of their mystery plants?

Options

- Use field guides to identify the mystery plants.
- Use hand lenses to view small animals in the soil. Slow organisms may be observed on paper towels; mobile specimens may need to be contained in jars.
- Have students classify and count the plant types for each location sampled. Complete taxonomic identification isn't necessary, but students should be able to differentiate and categorize specimens.



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The Missouri Department of Conservation announces Discover Nature Schools Science Fair!



Discover Nature Schools (DNS) Teachers:

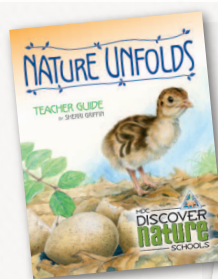
Enter your students' science projects in the Missouri Department of Conservation's (MDC) DNS Science Fair for a chance to win awards for your students and exploration equipment for your classroom. Projects should explore a local conservation topic and demonstrate connection to a DNS activity.

First, select winners from your school, then email winning entries to your local MDC Education Consultant for regional and statewide judging. It's easy!

MDC Discover Nature Schools Science Fair

- For all students K–12 currently participating in a DNS unit
- Entries will be accepted by email from Feb. 1 to March 15, 2013
- Check the education section on the MDC website at

mdc.mo.gov/node/19569



DNS Units

